

09/805237

WEST Search History

DATE: Tuesday, September 10, 2002

| <u>Set Name</u> | <u>Query</u> | <u>Hit Count</u> | <u>Set Name</u> |
|---|--|------------------|-----------------|
| side by side | | | result set |
| <i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i> | | | |
| L46 | l20 and l28 | 7 | L46 |
| L45 | l21 and l28 | 2 | L45 |
| L44 | l16 and (l1 or l2) | 1 | L44 |
| L43 | (l12 or l13 or l14 or l15) and l1 | 2 | L43 |
| L42 | L41 and l40 | 1 | L42 |
| L41 | removing near2 (charged adj particle) | 186 | L41 |
| L40 | l25 and l5 | 4 | L40 |
| L39 | L38 and (l1 or l2) | 4 | L39 |
| L38 | l23 and l24 | 5 | L38 |
| L37 | L35 and (l12 or l13 or l14 or l15) | 1 | L37 |
| L36 | L35 and l16 | 1 | L36 |
| L35 | L34 and (l7 or l8) | 113 | L35 |
| L34 | (l1 or l2) and l4 | 530 | L34 |
| L33 | L32 and l19 | 1 | L33 |
| L32 | l28 and l22 | 9 | L32 |
| L31 | l28 and (l12 or l13 or l14 or l15) | 1 | L31 |
| L30 | L29 and (l12 or l13 or l14 or l15) | 1 | L30 |
| L29 | L28 and (l9 or l10) | 4 | L29 |
| L28 | L27 and (l7 or l8) | 35 | L28 |
| L27 | (l3 or l4) and l5 | 570 | L27 |
| L26 | ((multipole or multi-pole) adj2 (magnetic adj field))same (multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate)) | 1 | L26 |
| L25 | (conver\$4 near4 ion) with (neutral adj beam) | 44 | L25 |
| L24 | (neutral\$7 near2 (cell or housing or chamber or wall)) same (negative adj (potential or voltage)) | 26 | L24 |
| L23 | (plasma near2 (source or generat\$3 or emit\$4 or wall))same (negative adj (potential or voltage)) | 704 | L23 |
| L22 | process near2 (cell or housing or chamber or wall) | 56632 | L22 |
| L21 | ((adjust\$4 or chang\$4 or var\$5) near2 (potential or voltage)) same (neutral\$7 near2 (cell or housing or chamber or wall)) | 28 | L21 |
| L20 | ((replensh\$3 or suppl\$4 or generat\$3) near4 electron) same (neutral\$7 near2 (cell or housing or chamber or wall)) | 47 | L20 |

| | | | |
|-----|--|-------|-----|
| L19 | conductive with ((multipl\$5 or plural\$3) near4 magnet\$2) | 1118 | L19 |
| L18 | ((multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate)) with (positive adj (potential or voltage))) same (neutral\$7 near2 wall) | 1 | L18 |
| L17 | (multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate)) with (positive adj (potential or voltage)) | 6 | L17 |
| L16 | (multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate)) same ((multipl\$5 or plural\$3) near4 magnet\$2) | 49 | L16 |
| L15 | ((multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate))) same (electron near3 (separat\$3 or remov\$3)) | 14 | L15 |
| L14 | ((multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate))) same (ion near3 (separat\$3 or remov\$3)) | 5 | L14 |
| L13 | ((multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate))) with (ion near3 (separat\$3 or remov\$3)) | 2 | L13 |
| L12 | ((multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate))) same (charge near3 (separat\$3 or remov\$3)) | 2 | L12 |
| L11 | ((multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate))) with (charge near3 (separat\$3 or remov\$3)) | 0 | L11 |
| L10 | (multi-aperture or ((multi\$5 or plural\$3) adj (hole or opening or aperture)) near2 (electrode or plate)) | 11058 | L10 |
| L9 | (multi-aperture or ((multi\$5 or plural\$3) near3 (hole or opening or aperture)) near2 (electrode or plate)) | 22113 | L9 |
| L8 | (neutral\$7 near2 gas) with (cell or housing or chamber or wall) | 1165 | L8 |
| L7 | neutral\$7 near2 (cell or housing or chamber or wall) | 4638 | L7 |
| L6 | neutral\$5 near2 (cell or housing or chamber or wall) | 4223 | L6 |
| L5 | ion near2 ((pulling-out or extract\$3) adj (electrode or plate or grid or mesh)) | 635 | L5 |
| L4 | plasma near2 (source or generat\$3 or emit\$4 or wall) | 45886 | L4 |
| L3 | ion near2 (source or generat\$3 or emit\$4 or wall) | 54774 | L3 |
| L2 | (neutral\$5 near2 beam) same (irradiat\$3 near2 (object or target or substrate or article)) | 88 | L2 |
| L1 | (neutral\$5 near2 beam) | 2697 | L1 |

END OF SEARCH HISTORY

WEST

Generate Collection

L39: Entry 3 of 4

File: JPAB

Mar 31, 1998

PUB-NO: JP410083899A

DOCUMENT-IDENTIFIER: JP 10083899 A

TITLE: NEUTRAL PARTICLE BEAM SOURCE

PUBN-DATE: March 31, 1998

INVENTOR-INFORMATION:

NAME

COUNTRY

SAITO, MASAO

INT-CL (IPC): H05 H 3/02; H01 J 27/02; H01 J 37/08; H01 J 37/252; H01 L 21/3065; H01 L 21/304; H01 J 49/10

ABSTRACT:

PROBLEM TO BE SOLVED: To irradiate a neutral particle beam stably even to an insulating material without charging the material by accelerating and extracting negative ions from a negative ion source and separating electrons and further removing at least a part of charged particles from the obtained neutral particle beam.

SOLUTION: A neutral particle beam source A comprising a plasma chamber 1 and a neutralizing chamber 2 and a sample chamber 3 in which a sample 11 is set in the center part of the bottom are connected through a neutral particle beam extracting outlet 10 with a small diameter of a charged particle removing electrode 8. In the surface treatment apparatus having such a structure, a gas such as oxygen is introduced into the plasma chamber 1 through a gas supply pipe 13 provided with a gas flow rate controller 14 and plasma is generated by glow discharge. In this case, the plasma is controlled to be plasma containing a large quantity of negative ions by controlling the pressure as high as about 1Torr by a vacuum pump 15. These negative ions are accelerated by applying negative voltage to a cathode 5 and at the same time earthing an anode 6 and the resultant ions are extracted into the neutralizing chamber 2 through an ion extracting outlet 7. Then, negative ions are collided with the residual gas to be neutralized and after that, charged particles are removed by the charged particle removing electrode 8 and the obtained neutral particle beams are supplied through the extracting outlet 10.

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